

CLAIMS

1 1. A method of concealing spatial errors in a coded image comprised of a stream of
2 macroblocks, comprising the steps of:

3 examining each macroblock for pixel data errors, and if such errors exist, then:
4 establishing at least one intra-prediction mode from neighboring blocks, and then
5 deriving estimated pixel data in accordance with the at least one established intra
6 prediction mode to correct the pixel data errors.

1 2. The method according to claim 1 wherein the coded imaged is coded in
2 accordance with a predetermined coding standard and wherein the intra prediction mode is
3 specified by the predetermined coding standard.

1 3. The method according to claim 2 wherein the coded imaged is coded in
2 accordance with the ISO/ITU H.264 coding standard and wherein the intra prediction mode is
3 specified by the ISO/ITU H.264 coding standard.

1 4. The method according to claim 1 wherein the establishing of at least one intra-
2 prediction mode is limited to information within a rectangular array of blocks centered about the
3 block having missing pixel data.

1 5. The method according to claim 3 wherein the at least one intra prediction mode is
2 established in accordance with a relative position of intra prediction modes of macroblocks
3 neighboring the macroblock with pixel data errors.

1 6. A method of concealing spatial errors in a coded image comprised of a stream of
2 macroblocks coded in accordance with the ISO/ITU H.264 Standard, the method comprising the
3 steps of:

4 examining each macroblock for pixel data errors, and if so, then:
5 deriving at least one intra-prediction mode from neighboring blocks, the mode specified
6 by the ISO/ITU H.264 standard; and
7 applying at least one interpolation filter corresponding the at least one derived intra
8 prediction mode to estimate the pixel data to correct the pixel data errors.

1 7. The method according to claim 6 wherein the establishing of at least one intra-
2 prediction mode is limited to information within a rectangular array of blocks centered about the
3 block having missing data.

1 8. The method according to claim 7 wherein the establishing of the at least one intra-
2 prediction mode is made in accordance with a relative position of intra prediction modes of
3 blocks neighboring the block with missing pixel data.

1 9. The method according to claim 6 wherein an individual macroblocks can be intra-
2 predicted as one of a single partition of 16x16 pixels (Intra_16x16 type coding) or as partition of
3 16 blocks of 4x4 pixels (Intra_4x4 type coding).

1 10. The method according to claim 9 wherein for the Intra_16x16 type coding, the
2 intra prediction modes comprise: (a) Mode 0, vertical prediction; (b) Mode 1, horizontal
3 prediction; (c) Mode 2, DC prediction; and (d) Mode 3, plane prediction.

1 11. The method according to claim 9 wherein for the Intra_4x4 coding type, the
2 prediction modes each one having associated an interpolation filter to derive a prediction for each
3 pixel within a block.

1 12. The method according to claim 9 wherein the prediction modes comprise: (a)
2 Mode 0, vertical prediction; (b) Mode 1, horizontal prediction; (c) Mode 2, DC prediction; (d)
3 Mode 3, diagonal down-left prediction; (e) Mode 4, diagonal down-right prediction; (f) Mode 5,
4 vertical right prediction; (g) Mode 6, horizontal down prediction; (h) Mode 7, vertical left
5 prediction; and (i) Mode 8, horizontal up prediction.
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